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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,161	09/24/2003	Eiichi Sakaue	243128US2RD	2804
22850	7590	06/18/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			EXAMINER	
1940 DUKE STREET			RUTHKOSKY, MARK	
ALEXANDRIA, VA 22314				
			ART UNIT	PAPER NUMBER
			1745	
			NOTIFICATION DATE	DELIVERY MODE
			06/18/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/668,161	SAKAUE ET AL.	
	Examiner	Art Unit	
	Mark Ruthkosky	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3 and 5-23 is/are pending in the application.
- 4a) Of the above claim(s) 5-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 2,3,22 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This paper is in response to applicants' amendment filed 3/27/2007.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The rejection of claim 1 under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al. (US 6,844,094) has been rendered moot by applicants' cancellation of the claim.

Claim 2 is rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al. (US 6,844,094).

Kobayashi et al. (US 6,844,094) teaches a fuel cell system comprising a fuel cell having an anode, a cathode and an electrolyte film put there between; a fuel supply unit supplying fuel to the anode; and a gas supply unit having a pump, the pump giving negative pressure to the

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cathode so as to introduce gas containing oxidant to the cathode (see claims 1-12, col. 5, lines 30-end; col. 7, lines 1-30, col. 8, line 51.) The pump gives negative pressure to the fuel cell at both electrodes (see col. 6, lines 42-65.) Further, the pump may be supplied at the hydrogen gas supplying apparatus, (col. 13, lines 20-25.) An additional pump supplies positive pressure to the fuel supply unit (col. 6, line 66.) Thus, the claim is anticipated.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US 6,844,094) has been rendered moot by applicants' cancellation of the claim.

Claims 3 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US 6,844,094.)

Kobayashi et al. (US 6,844,094) teaches a fuel cell system comprising a fuel cell having an anode, a cathode and an electrolyte film put there between; a fuel supply unit supplying fuel to the anode; and a gas supply unit having a pump, the pump giving negative pressure to the cathode so as to introduce gas containing oxidant to the cathode (see claims 1-12, col. 5, lines 30-end; col. 7, lines 1-30, col. 8, line 51.) The pump gives negative pressure to the fuel cell at both electrodes (see col. 6, lines 42-65.) Further, the pump may be supplied at the hydrogen gas

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supplying apparatus, (col. 13, lines 20-25.) An additional pump supplies positive pressure to the fuel supply unit (col. 6, line 66.) The reference does not teach that the pump supplies positive pressure to the fuel supply unit. The reference does, however, teach the second pump used to provide a positive pressure to the fuel supply by recirculating the hydrogen exhaust to the hydrogen supply (col. 6, line 28 to col. 7, line 30.) Based on the teachings of Kobayashi et al. (US 6,844,094), it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the pump of the hydrogen circuit at the exhaust portion of the circuit in order to create a negative pressure on the system as taught in the air supply circuit of Kobayashi et al. (US 6,844,094.) The pump will also provide a positive pressure to the fuel supply as taught in the reference by adding the exhaust gas to the supply hydrogen. The artisan would have found the claimed invention to be obvious in light of the teachings of the references.

Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a single pump to provide a negative pressure to the oxidant and fuel supply passages, as taught in Kobayashi, and to provide positive pressure to the fuel supply passage in order to give a positive pressure as the second pump used in Kobayashi. The prior art recognizes that a positive pressure is supplied to the fuel cell anode using a pump. Thus, using one pump to provide both functions described in Kobayashi would be obvious to the skilled artisan based on the teachings of the reference.

Response to Arguments

Applicant's arguments filed 3/27/2007 have been fully considered but they are not persuasive. Applicant argues that the Kobayashi reference does not teach negative pressure

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applied to both the positive and negative gas passages, as required by the claims. This argument is not persuasive as the Kobayashi reference teaches a pump that provides negative pressure to the fuel cell (see col. 5, lines 30-40, col. 6, lines 42-65; paragraph bridging cols. 8-9.) Further, the reference teaches that the pump may be supplied directly to the hydrogen gas supplying apparatus, (col. 13, lines 20-25.)

With regard to applicants' arguments that modification of Kobayashi to omit the hydrogen circulating pump and add structure for a suction pump would not have been obvious to the skilled artisan, the modification of the reference does not require omitting said pump. Based on the teachings of Kobayashi et al. (US 6,844,094), it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the pump of taught in Kobayashi in the hydrogen circuit at the exhaust portion of the circuit in order to create a negative pressure on the system as taught in the air supply circuit of Kobayashi et al. (US 6,844,094, col. 13, lines 20-25.) The pump will also provide a positive pressure to the fuel supply as taught in the reference by adding the exhaust gas to the supply hydrogen as noted in the rejection. No suggestion has been made to omit the hydrogen-circulating pump.

As noted in the rejection, it would have been obvious to employ a single pump to provide a negative pressure to the oxidant and fuel supply passages, as taught in Kobayashi, and to provide positive pressure to the fuel supply passage in order to give a positive pressure as the second pump used in Kobayashi. The prior art recognizes that a positive pressure is supplied to the anode fuel supply in the fuel cell anode using a pump. Thus, using one pump to provide both functions described in Kobayashi would be obvious to the skilled artisan based on the teachings of the reference. Applicant has submitted that the definition of a pump includes a machine that

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draws a fluid into itself through an entrance port and forces the fluid out through an exhaust port. (McGraw-Hill Dictionary of Scientific and Technical Terms, Fifth Edition). As one of skill in the art understands this definition, it would be clear that a pump would provide the required features needed to provide both a negative and positive pressure to the fuel cell.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 571-272-1291. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-

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6:30.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free.)

Mark Ruthkosky

Primary Patent Examiner

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 6-9-2007